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IN THREE SECTIONS

Section I

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IN THIS ISSUE

Essential Elements of Cost for Uniform Accounting Under the N. R. A. 469

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EDITORIAL NOTE

As soon as the Industrial Recovery Act became law it was apparent that the provisions relating to codes of fair practice, in so far as they were directed toward the elimination of "selling below cost," would inevitably lead to the necessity for some specific definition of cost within each industry, tied in with some form of uniform accounting which would make it possible to compare costs between the several units in the industry.

Many of our members have been active in the development of codes for their industries and are at the present time engaged in the development of uniform accounting methods for their industries or in revising methods already in existence in order to bring them into conformity with the code provisions or the requirements of the administrator.

Some weeks ago our National Board authorized the appointment of a committee to consider the compilation of a definition of cost which might be of service to our members not only in the formulation of code provisions, but also in the development of uniform systems of accounting.

As a result of its deliberations, this committee came to the conclusion that it was doubtful if any standard definition of cost applicable to all industries and under all circumstances could be devised. Such a definition would probably have to be so general in its terms as to have little if any value as a basis for the prohibition of "selling below cost."

However, in spite of the differences which exist between industries due to local conditions, it does appear that there are certain fundamental elements which must always be incorporated in cost. In addition to these, there are other more or less controversial elements which may or may not be included, according to the policy of the industry.

The purpose of this report from the committee is to present the standard or normal items which must always be included in cost and to indicate the different methods by means of which these costs may be compiled. And, in addition, to enumerate some of the more important controversial items which may or may not be included with the arguments for and against.

While this publication does not attempt a specific definition of cost, we believe it will prove of value to our members and to others who are at present engaged in the preparation of codes or in the development of uniform cost methods.

An extra supply of this report has been printed which is available for general distribution.

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NATIONAL ASSOCIATION OF
COST ACCOUNTANTS

December 15, 1933

ESSENTIAL ELEMENTS OF COST FOR UNIFORM ACCOUNTING UNDER THE N.R.A.

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IN RECENT months as various trade groups have organized to develop codes of fair competition under the N.R.A., one of the most perplexing problems that has arisen is concerned with the agreement not to sell below cost. Such an agreement in one form or another exists in many of the codes that have been submitted to Washington, and the general intent, even where not directly defined, seems to be that each individual group shall adopt a uniform method of cost accounting.

The reason why this situation has given rise to a perplexing problem is that, except in the comparatively few cases where uniform cost practice has been adopted within an industry, business concerns have followed whatever cost practice seemed best suited to their own individual needs. Some have cost systems that are actually tied in with the general ledger accounts, and they really know their costs. Many others, however, have no such control, and are satisfied with occasional test costs and estimates.

Under such conditions different manufacturers have different ideas as to what constitutes cost. Recently, in several instances, the individuals within a group of manufacturers have submitted their cost figures on an identical product manufactured by all within the group. Repeatedly such figures have shown that the costs of some manufacturers exceeded those of others by as much as 100%, and in no instance has there been anything approaching agreement. Differences of over 50% in cost of material alone are

common, even where all are using similar material as to type and price.

Experiences of this nature had already influenced trade groups to adopt uniform cost methods even before the advent of the N.R.A., but very few trade associations were able to get all or even a majority of their members to install and use the recommended procedure. Many manufacturers believed that, under the old competitive conditions, they had to sell at or below the common market price, and consequently saw no value in maintaining accounting methods which appeared to them elaborate and unnecessary.

The advent of the N.R.A., and the opportunity which it offers to protect the members of an industry against those who intentionally sell below cost, provides an entirely different conception of the purpose and the need of uniform cost methods, and creates a very definite demand for a clear understanding of the components that enter into cost. Every proprietor and every cost accountant must now consider this matter, not from the point of view of his own personal preferences but rather from the point of view of what is best for his industry. Certain elements which he formerly included in or excluded from cost may not logically be so treated when the interests of the group are considered.

It is not possible within the scope of this report to outline a uniform cost plan that is applicable to each different class of industry; nor is it practicable to assert that the job cost plan or the standard cost plan is best suited to the needs of every group. It is possible, however, to define the elements that enter into the cost of producing, and the elements that enter into the cost of selling and distributing a product, and each industry can then proceed to record and accumulate the required data in the form best adapted to its needs.

Fundamental Meaning of Cost

Accounting for manufacturing cost in any manufacturing plant means the accounting for every dollar spent for material, labor and expense of every character that enters directly into production, and for the money spent on the administration of the factory operations, the experimental work, engineering work, repairs, maintenance, etc., that may in any way contribute to the manufac-

ture of the product. Accounting for selling and distribution costs means an accounting for every dollar spent which in any way enters into the cost of selling and distribution.

In fact every expenditure within a business must be accounted for and ultimately charged to and included in the cost of goods sold, or against profits earned through sales, and the primary purpose of cost accounting should be to obtain that allocation of expenditures which will most accurately and effectively inform the management concerning the true cost of manufacturing, selling and distributing its product.

The development of a uniform cost accounting plan for any industry must naturally give consideration to those requirements which are peculiar to the kind of industry in question. There are, however, certain general principles of cost accounting which are applicable to every form of manufacturing, such as the accounting for raw materials and purchased parts, or for the hours and wages of direct labor. The determination of manufacturing burden and its segregation into fixed and variable expenses are also recognized as fundamental principles of good cost accounting, but when it comes to choosing the form of burden rates to be used in distributing burden to the products there are conditions peculiar to each particular industry that must be taken into consideration.

When, therefore, we consider the basis for calculating the burden rate and have to choose machine hours, man hours, a percentage of direct labor payroll, or a process or tonnage rate as a method for charging burden to cost, the decision must be in line with what is best for the industry. Likewise in determining normal hours, or the normal tonnage, consideration must be given to conditions in the industry over a period of years which is sufficient to establish an equitable normal for general acceptance, and this must be further modified by what action is to be taken under the N.R.A. within the industry to limit or control production.

There has been no official ruling by the N.R.A. as to what constitutes normal production; but in an address before the New York State Society of Certified Public Accountants on October 30, 1933, Mr. Malcolm Muir, Division Administrator, suggested that the experience of the years 1927-1932 be used in obtaining figures on which to base normal production.

On this matter of a normal production, or normal rate of plant utilization, consideration will have to be given to what is normal for the industry as a whole, as well as for the individual plant. The same applies to the varying expense levels of more or less efficient plants; the variations will have to be studied in the light of what is typical in the industry. As hours of labor and working conditions are brought more into uniformity by N.R.A. regulation, many of these variations will disappear; and still more will vanish when uniform cost methods are applied.

In connection with selling and distribution expenses and their allocation to individual products or lines of merchandise sold, there has been less uniformity than in accounting for manufacturing costs. Industry as a whole, however, is keenly aware of the necessity for allocating all selling expenses so that the profit or loss on each class of sales or on each article sold is known, and in certain instances some notable results have been obtained along this line.

Debatable Points

In addition to the fundamental or basic items which must be incorporated in any determination of cost in any line of industry, there are certain other items upon which there is division of opinion among competent cost accountants. Each industry should consider these items in the light of the conditions which are peculiar to itself and endeavor to arrive at a common understanding which will be generally acceptable within the industry.

The principal debatable points concerning burden factors are the following:

1. Administrative Expense—In various trade groups where uniform cost accounting has been developed, administrative expenses have been divided between manufacturing and selling as accurately as possible so as to absorb all administrative expense in factory burden and in selling expenses. In other trade groups it has been the practice to treat such expenses as a separate factor to be added to manufacturing cost or deducted from the gross profit margin.

2. Depreciation on Replacement Values—Some trade groups have adopted the practice of basing depreciation on replacement

values. Other groups believe in calculating depreciation on the basis of original costs.

3. Interest on Investment as a Cost—In developing uniform cost accounting plans various industries have included interest on invested capital in cost, because they believe that this procedure is the easiest and surest way of providing for proper cost comparisons and for measurements of pure profit above a return for the use of capital. Other industries deny the necessity of including interest as a cost in the actual accounting, and recognize it as a cost only in collateral statistical records. Still others believe it correct theory and practice to include interest as a part of profit rather than as an element of cost.

In order to facilitate discussion of these debatable points, affirmative and negative arguments on each are presented at the end of this discussion.

Basis of Effective Cost System

Before any type of cost system can become effective, steps must be taken to secure control of stores of raw materials, manufactured and purchased parts, and assemblies, with the necessary accounts and stores records. The procedure for planning production, the method of routing and scheduling work, the type of manufacturing orders to be issued, and the points at which the product shall be inspected and counted, must also be arranged so as to provide for the proper efficiency and economy in operation.

Methods must then be devised to account properly for materials drawn from stock, to distribute every dollar of wages, and to record and allocate all expenses so that they are properly included in manufacturing cost, or charged to other activities of the business.

Actual Costs

Under the two primary systems of actual costs—job costs and process costs—it is customary to accumulate for each job or for a certain quantity of product the requisitions for materials used, the direct labor of each operation, and the manufacturing burden based on labor hours, machine hours, percentage of direct labor or process rates. To this must be added the selling and distribution

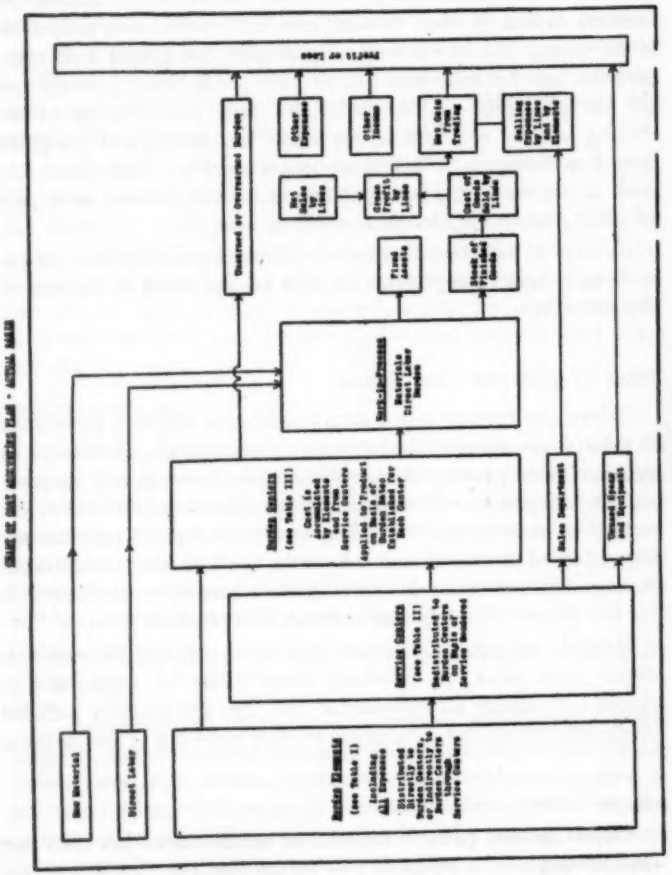
Sales
Other Expenses
Other Items
Net Profit or Loss
Selling Expenses by Lines of Goods Handled
Net Sales by Lines
Gross Profit by Lines
Cost of Goods Sold by Lines
Finished Goods
Stock of Finished Goods
Distribution Costs
Materials Distributed Here
Service Centers
Cost to accumulate by Elements in Service Centers
Applied to Product on Basis of Service Rendered by Each Center
Materials Distributed to Service Centers on Basis of Service Rendered
Sales Department
Shipping Room and Warehouse
Raw Materials
Direct Labor
Service Centers
Distributed Directly or Indirectly to Service Centers Rendering Service

EXHIBIT A

costs applicable thereto. Such an accumulation of actual costs through a job or process cost plan is in accord with sound accounting principles, and readily securable in almost any business.

Standard Costs

It is also possible and in accordance with sound accounting theory to go a step beyond actual costs and develop predetermined costs as standards with which actual costs may be compared.

Under the actual cost plan the cost of an individual job is not known until the job is completed. Under the other plan the standard cost is known in advance, and as a job progresses each variance between standard and actual cost can be investigated. When standard costs are thus combined with actual costs, the management, by applying the principle of exceptions, is able to focus its attention from day to day on all variations from the expected, and to apply corrective measures at once.

The whole trick of standard cost practice is to decide at what points, what operations, what functions or what products to check actual costs against standard costs. Comparisons can be made at any point, it being entirely a question of simplifying the clerical work, and at the same time giving executives the information that will be most useful to them.

The Accounting Plan—Actual and Standard

The accompanying exhibits, A and B, with Tables I, II and III, show how a uniform cost system can be developed and tied in with the general ledger accounting, so as to provide proof of accuracy of cost data, periodic inventories and periodic profit and loss statements.

Exhibit A, illustrating an actual cost plan, shows how the elements of cost are applied on various bases to departments or production centers where they are distributed by hourly rates, processes or percentages. The chart shows how materials, labor and burden are applied to Work-in-Process and to Finished Goods at actual cost; how the Cost of Goods Sold is determined and carried to the periodic profit and loss statement.

Exhibit B, illustrating a standard cost plan, shows in similar fashion how the elements of cost are applied to departments or

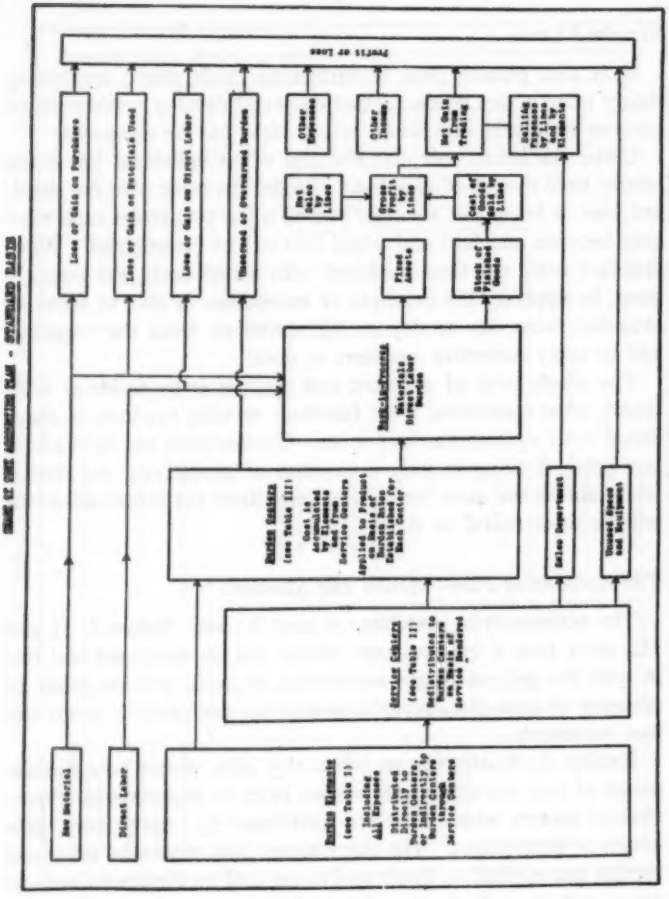
Sales
Less or Gain on Purchases
Less or Gain on Materials Used
Less or Gain on Direct Labor
Unabsorbed or Overabsorbed Burden
Other Expenses
Other Income
Net Gain or Loss Trading
Selling Expenses by Lines or Kinds
Net Sales by Lines
Gross Profit by Lines
Cost of Sales by Lines
Plant Assets
Stock of Finished Goods
Machine-Process Materials Direct Labor Burden
Burden Centers (see Table III) Cost is Accurately by Elements and From Service Centers Applied to Product Each by Its Own Burden Rate Established For Each Center
Service Centers (see Table II) Redistributed to Burden Centers on Basis of Service Rendered
Sales Department
General Admin. and Development
Burden Elements (see Table I) Including All Expenses Distributed Directly to Burden Centers or Indirectly by Basis of Service Rendered
New Material
Direct Labor

EXHIBIT B

productive centers. The chart then shows how materials, labor and burden are accounted for at standard cost as they enter into Work-in-Process and Finished Goods, how the Cost of Goods Sold is determined on a standard basis, and how the adjustments of standard costs are ascertained and carried through special loss or gain accounts to the periodic Profit and Loss Statement.

Industry Itself Must Act

In drawing the code provision relative to the requirement of a uniform cost accounting plan, which must be based on the fundamentals outlined above, the members of the industry should be careful to reserve the right to determine the cost formula best suited to their own conditions of operation. The code, for example, might well be made to provide for a uniform system as formulated by the Code Authority of the industry, with the right of review (but not initial approval) reserved to the N.R.A. In this way flexibility can be retained, and a uniform system devised and installed with minimum delay.

The National Recovery Administration will not concern itself with the detailed method of cost accounting adopted by an industry, but will simply see that no principles included therein are contrary to the general policy of the administration. In other words, each industry is expected to determine for itself, in the light of fundamental requirements, what form of uniform cost practice is needed in order to develop for its members the costs below which no sales can be made.

TABLE I

BURDEN ELEMENTS

Rent
Interest on Investment
Taxes
Depreciation
Insurance—Fire
Insurance—Compensation
Insurance—Miscellaneous
Indirect Labor
Supplies
Small Tools
Purchased Gas
Purchased Electricity
Purchased Water
Greases and Oils
Repairs and Maintenance—Buildings
Repairs and Maintenance—Machinery
Repairs and Maintenance—Equipment
Repairs on Returned Goods
Reconditioning Parts
Spoiled Work
Donations
Legal and Professional Services
Salaries
Commissions
Telephone and Telegraph
Postage
Freight and Express
Traveling Expense
Automobile and Drayage Expense
Advertising
Allowances to Customers
Cancellation Expense
Demonstration Expense
Experimental Work
Dues and Subscriptions
Miscellaneous Charges

NOTE—This list illustrates the Elements of Burden which are chargeable either indirectly through Service Centers or directly through Burden Centers to Manufacturing Cost and to Selling Expense.

TABLE II

SERVICE CENTERS

Steam Plant
Power Plant
Building Expense
Shop Maintenance
Engineering
Drafting
Inspection
Testing
Laboratory
First Aid
Employment
Production Planning
Cost and Payroll
Tool Storage
General Administration
General Burden

NOTE—This list illustrates centers through which various Elements of Burden must be accumulated in order that the total cost of operating each center may be redistributed to Burden Centers on the basis of service rendered.

TABLE III

BURDEN CENTERS

Purchasing, Receiving and Stores
Sheet Metal Plant
Forge Shop
Planers
Turret Lathes
Engine Lathes and Vertical Mills
Screw Machines
Polishing
Milling Machines
Gear Cutting and Key Seating
Drilling and Horizontal Mills
Grinding
Special Tools
Tool Room
Assembling
Painting
Shipping
Merchandising and Sales Department
*Unused Space and Equipment

NOTE—This list illustrates the Burden Centers within a metal working plant and indicates how the Elements of Burden and charges from Service Centers are accumulated and then added to Manufacturing Cost and to Selling Expense on the basis of predetermined burden rates.

*The charges accumulated here are carried direct to Profit and Loss.

DEBATABLE POINTS

1. Should administrative expenses be divided between manufacturing and selling?

2. Should depreciation be calculated on the basis of replacement value?

3. Should interest on investment be included as an element of cost?

1. *Should Administrative Expenses Be Divided Between Manufacturing and Selling?*

AFFIRMATIVE

I. In a manufacturing business there are no activities which do not serve the principal functions of production and selling.

A. It is true that general office salaries, expenses incurred in connection with the maintenance of corporate records, legal expenses and other general expenses are not incurred solely for production or solely for selling.

B. Nevertheless such expenses are brought about by the activity of the organization as a producing and selling unit.

II. In order to obtain the total manufacturing cost and the total selling cost of the product, it is essential that administrative expenses be allocated to production and selling.

A. It is as feasible to make such an allocation as it is to prorate various manufacturing costs between departments, or various selling expenses between offices.

B. Proper inventory valuation requires that administrative costs assignable to manufacturing be included in the unit costs of the product.

C. With prohibition of sales below cost under the N. R. A., the importance of having the true total cost (compounded from all proper manufacturing and selling elements) should be recognized.

III. Where administrative expense is distributed to production and to selling, and budgetary control is in operation, there is a

better incentive, and a wider opportunity, to exercise control over such expenses.

A. When administrative expenses are simply handled as a deduction from the profit on sales, there is a tendency to overlook the possibilities of strict control.

B. Control cannot be had without knowlege, and information as to the exact effect of administrative expenses on production and on selling is what is needed to point the way to needed efficiencies and economies.

1. *Should Administrative Expenses Be Divided Between Manufacturing and Selling?*

NEGATIVE

I. To attempt to divide administrative expenses between production and selling is to distort the functional relationships of the enterprise.

A. To follow the line of reasoning of the affirmative, it might be said with equal logic that the primary purpose of an enterprise is to sell its product, and that, therefore, in the final analysis every cost is a selling cost.

B. As a matter of fact, the primary functions of management are three—financing, manufacturing and selling.

1. So-called administrative expenses are at least partly concerned with the financial function.
2. There is no more justification for charging all such expenses against production and selling than there would be to charge them all against the financial function.

II. An effort to prorate administrative expenses between manufacturing and selling would not produce true costs as between departments, lines of product, etc.

A. In the absence of really reliable measures of performance (especially where financial function costs are being distributed where they do not belong), it is necessary to use arbitrary methods of distribution, for the relationships of

administration to manufacturing and selling are far more indirect than are the relationships within the manufacturing section or the selling section.

B. The inclusion of administrative costs in the inventory value runs counter to the established principles of inventory valuation.

C. Although the N. R. A. contemplates sales above cost, this does not mean that the functional articulation of the costs has to be disturbed.

III. It is true that too little attention is paid at times to control over administrative expenses, but it does not follow that such expenses must be buried in manufacturing and selling costs in order to have proper control exercised.

A. In fact, neither the production executives nor the selling executives are in a position to *control* administrative expenses.

B. It is the duty of management to control such expenses, and this can be better accomplished by having complete information about the relationships of all costs than by combining unrelated costs.

2. *Should Depreciation Be Calculated on the Basis of Replacement Value?*

AFFIRMATIVE

I. Present-day accounting is trying unwisely to make the same dollar record represent four different functions of the dollar, namely:

1. To act as a medium of exchange in buying and selling.
2. To act as a storehouse of value for the time elapsed between exchanges of goods.
3. To act as valid tender for the payment of debts.
4. To act as a measure of value of goods owned.

A. In the first two cases the dollar serves its purpose well, though in the second a change in the purchasing power of the dollar may result in gains or losses outside of the expected profit on conversion.

B. In the third case, where long-term indebtedness is involved, the change in the purchasing power of the dollar over the period may make the payment in dollars inequitable.

C. In the last case the dollar value of long-lived assets at the date of purchase, even after deductions for depreciation, is an unsatisfactory measure of value at later dates on account of changes in the purchasing power of the dollar.

II. A study of price changes for over a century shows clearly-defined cycles averaging from 20 to 30 years.

A. The variations are as much as 45% above and below the 1913 par.

B. The price cycles on long-lived properties are in the nature of tides, as compared to the waves of short-cycle prices of raw materials and commodities.

C. Periodically, however, a sufficient change develops in property values to warrant an adjustment of original costs to present values based on the current purchasing power of the dollar.

III. Failure to recognize cyclical changes in the values of long-lived plant assets constitutes a disregard of the economic character of such assets.

A. The dollars originally invested in plant assets are not the real investment of the owners.

1. The real investment of the owners lies in the capital goods, or property purchased with the dollars.
2. Whatever may happen to the purchasing power of the dollar, the capital goods continue to represent the real sacrifice of the owners.

B. As the capital goods are consumed in use, the owners must be provided with full means of replacing them at the end of the useful life.

1. Replacement of capital goods in kind and not replacement of their original valuation, should be the aim of depreciation accounting.
2. The end in view should be the same, regardless of whether the capital goods have risen or fallen in value, as measured by the changes in the fluctuating dollar.

IV. Accountants are wrong in assuming that the mere replacement of the original dollar outlay for plant assets is the only point that concerns the owners.

A. If original costs are lower than replacement costs, accounting for depreciation on the basis of original costs produces falsely low costs and overstated profit (or understated loss).

B. If original costs are higher than replacement costs, accounting for depreciation on the basis of original costs produces falsely high costs and understated profit (or overstated loss).

C. In neither case do the owners get a true statement of the present value of plant, a true statement of the actual value of plant utility used up in production, and a true statement of the actual profit or loss from operations.

D. If these points are of no significance, then the owners need not bother with adjusting their accounting methods; but the fact is that an established change in the price level may have many times as much bearing on the profit and loss statement as does the usual depreciation charge based on original cost.

V. The requirement of the Internal Revenue Department that depreciation be based on cost or March 1, 1913 value does not restrict industry to improper accounting.

A. The very requirement that March 1, 1913 value, if the property was acquired prior thereto, be used as the basis for depreciation, is a partial recognition of the undesirability of depreciation based on original cost as a deduction from current income.

B. In connection with the use of original cost of property acquired after March 1, 1913, it should be remembered that tax returns are based on arbitrary regulations, and that executives are not obliged to follow such regulations as law and gospel in their own accounting.

C. Adequate recognition of tax requirements can be given where depreciation is taken on appreciated values, by splitting the depreciation reserve into two parts, one to reflect depreciation taken on cost and the other to reflect depreciation taken on appreciation.

VI. The propriety of using replacement value instead of original cost is recognized in insurance, where, by contract terms, the measure of loss, if fully insured for, is the replacement value less depreciation of the asset destroyed.

A. No one denies that it is not sufficient to insure up to original cost if this is lower than present value.

B. Nor will anyone deny that it is foolish to pay for more insurance than can be collected, if the original cost is greater than the present value.

VII. It is inconsistent that industrial accounting should not measure the current year's conversion of plant utility into product with the same dollar scale that is used in applying the same period's conversion of materials and labor into the product. The only material difference between quick and fixed assets—rapidity of turnover—does not warrant different accounting treatment.

A. Appreciation of plant assets, due to a decrease in the purchasing power of the dollar, may or may not be long-continued, but the current year's portion of such appreciation, as reflected in the depreciation charge, should be included in the current accounting, in recognition of the ultimate necessity of replacing the capital goods in kind.

B. A decline in the value of plant assets, due to an increase in the purchasing power of the dollar, may or may not be long continued, but the current year's portion of such decline, as reflected in the depreciation charge, should be included in the current accounting, in recognition of the fact that such charge is all that needs to be imposed on the present consumers to insure the ultimate replacement of the capital goods in kind.

VIII. It may be argued that it is not necessary to charge depreciation on replacement value into cost in order to provide adequate means for future replacement. It may not be necessary, but it is more prudent.

A. It is true that if the selling prices over the period are sufficient to cover costs and accumulate a surplus wholly adequate to provide for the ultimate replacement of plant at enhanced

values, and all other contingencies resulting from the risks of the enterprise, neither the owners nor the consumers will be injured by currently charging depreciation on original cost and using a higher margin of profit.

B. Under the stress of competition, however, there is greater danger of sacrificing the acquistion of the means of future replacement if such means are loosely covered by the margin of profit than if they are exactly figured as an element of cost.

C. Moreover, where the plant assets are ultimately to be replaced at lower values than original cost, the failure to decrease accordingly the depreciation charge to costs means, except in a practical monopoly, the foregoing of competitive advantages that might do more for profit-making than would the maintenance of higher costs.

IX. History shows the injurious effects of improper accounting for depreciation.

A. For thirty years, while prices were rising, industry was recovering, on account of falsely low costs and inadequate profit margins, less than the amount required for the ultimate replacement of its plants.

1. Part of this prospective loss on replacement was gradually absorbed through the replacement of the shorter-lived plant assets.

2. The major portion of such prospective loss, however, remained as a deferred liability with nothing on the books to indicate its presence, except as a surplus account might be available to cover all risks of the business.

B. In recent years, with prices fallen below normal, and the purchasing power of the nation depleted, industry has been struggling for a profit margin above falsely high costs.

1. To insure sales at a profit, it is necessary to know true costs.

2. Managements today, in increasing number, are awakening to their duty and responsibility of seeing that plant values are revised downward so that depreciation as an element of cost can be figured on a proper basis.

X. Bankers are learning that their near-sighted attention for years to quick assets, with a practical ignoring of plant assets, is not the best policy to secure long-term lines of credit.

2. *Should Depreciation Be Calculated on the Basis of Replacement Value?*

NEGATIVE

I. It is true that original plant dollars on the books are merely historical records of value which are true only at the date of purchase, but simply accounting for depreciation on the basis of replacement values will not correct all the inequalities of the unstabilized dollar.

A. If plant assets are carried at original cost, less a depreciation reserve calculated on the basis of replacement value, the net book value will not indicate the true present value.

B. If the plant assets were adjusted to replacement values on the books, the foregoing objection would be removed. It would be economically unfair, however, to scale down the plant assets on the basis of a change in the purchasing power of the dollar, without at the same time scaling down the long-term debts of the owners on the same basis; or vice versa; and yet no advocate of replacement value applies his logic equally to such assets and liabilities.

C. As a matter of fact, it is a valid question whether the use of replacement values is not a relatively insignificant portion of a basic economic problem, and whether the attention of all would not better be devoted to the question of devising a suitably calibrated or stabilized dollar for use in all connections.

II. History does show cycles of major price changes; but to give due recognition to this fact, even in connection with plant values alone, would place a heavy burden on industry.

A. Appraisal engineers say that theoretically they would follow the value changes in plant assets just the same as with inventories, and that the scientific way would be to have an appraisal every year.

B. When questioned, they say that in the majority of cases it would be several years before a sufficient change developed in property values to warrant making radical adjustments on the books.

C. It is evident, however, that the "true costs" which appraisal engineers talk about could be obtained only upon the basis of appraisals whose frequency, in periods of rapidly changing prices, would impose burdensome expenses upon industry.

D. To the extent that successive appraisals alter the replacement value of the property, therefore, there will be fluctuations in the current depreciation charges over the remaining life of the assets, since there should be charged into cost over the life of the assets only the ultimate replacement cost, whatever that may be.

E. It is impossible on this basis to deal equitably with consumers over the whole life period, for depreciation payments by early consumers are not susceptible of adjustment in the light of what they would have been if the ultimate replacement value of the property had been known.

1. If the consumer were to pay for depreciation each year on the basis of a revised appraisal of replacement value, without regard to the total depreciation already charged to cost, (just as he pays current material prices, wages, interest, etc.), the procedure would be consistent but aimless.
2. The goal of replacement-value depreciation accounting is the accumulation through costs of the ultimate replacement value; and this constantly variable limit may impose the heaviest burden upon, or give the greatest relief to, the final consumers.

III. The original investment of the owners, in dollars, is transformed, to be sure, into capital goods; but there are several considerations which militate against the idea of providing for the ultimate replacement of these goods in kind, at a now indeterminable cost.

A. Even the exact character of the replacing property is by no means certain, for with the progress in the arts the future use of identical units may be undesirable or unnecessary.

B. At the instant of investment the sacrifice of the owner, or investor, is best determined by the dollars contributed; and, on account of recurring price level, the same thing may be true on the day of replacement.

C. At any rate, despite the alleged regularity of price cycles within wide limits, there is no more certainty that the replacement value of capital goods on the day of replacement will be equivalent to their original cost, than that it will not be.

D. In view of this fact, there is little sense in bothering with frequent intermediate adjustments which are admittedly temporary.

IV. Accountants are correct in assuming that the replacement of the original dollar outlay for plant assets is of primary importance to the owners, for any other proposal leads into a morass of difficulties.

A. Advocates of depreciation on replacement values say that in general, adjustments of book values to appraisal values should not affect earned surplus, on the assumption that prior depreciation charges were adequate under conditions as they then appeared, and that past earnings were true earnings. This means that all necessary provisions for depreciation to cover ultimate replacement value must be made in the remaining years of life of the property.

B. Assume, for example, a property costing $1,000,000 half depreciated in twenty-five years, with a depreciation reserve of $500,000. If the current replacement value of the property is $2,000,000, provision for depreciation must be made to accumulate $1,500,000 in the next twenty-five years.

C. Assume, on the other hand, the same cost and reserve data, but with a current replacement value of only $500,000. In this instance, no further depreciation will need to be taken during the next twenty-five years, unless the replacement value increases.

V. In the absence of a stabilized dollar, the Internal Revenue Department has taken the original cost of plant assets as the most desirable basis for calculating the proper charges to consumers,

not only because of the simplicity of the method but also because of its relative equity over the life period.

VI. Insurance does recognize the propriety of using replacement cost less depreciation instead of original cost less depreciation as the measure of present value, but what is satisfactory as an emergency measure is not necessarily the criterion for continuous practice in the future.

A. At the time of loss, the relative rights of the insured and the insurance company can be settled by compromise upon the basis of replacement value less depreciation, rough as the calculation usually is.

B. To project such a method over future accounting, however, would be to introduce a continually variable factor into the cost accounting and distort the relations with consumers.

VII. It is a false analogy to reason that the conversion of plant utility into product must be measured with the same dollar scale that is used in connection with the conversion of materials and labor into the product.

A. Changes in the current purchasing power of the dollar, in so far as current prices of materials and labor are concerned, can be compensated through adjustments in the selling price of the product, for such changes are known.

B. Variable and uncertain developments in the future purchasing power of the dollar cannot be currently compensated for, without working injustice to past, present or future consumers.

VIII. Possible losses on replacement, due to an unstabilized dollar, are an inherent part of business risk under the existing economic system; and if, on future replacement, more than the original outlay is required, that is simply a factor to be provided for out of surplus, whether or not specific reservation of surplus has been made for such a purpose.

A. Since the terms and even the fact of ultimate replacement in kind cannot be known in advance, the costs of future replacement cannot be "exactly figured" currently, and they would

better be covered by the acquisition of sufficient profit to cover the general business risk.

B. Competitors who are dazzled by current competitive advantages gained by eliminating or reducing proper elements of cost usually find that it is not so easy to increase prices as costs rise later, and the net result over a long period is unsatisfactory.

IX. The lack of adequate profits in the past was due not to wrong methods of accounting for depreciation but to a short-sighted selfish individualism.

A. If profit margins were too low during the period of rising prices, the situation as regards the accumulation of funds to provide for replacement at above original cost would not have been helped by basing depreciation on replacement values, for this would not of itself have removed the overproduction and cutthroat competition that made selling prices inadequate.

B. In recent years, with prices fallen far below normal, the most far-sighted managements have turned their attention to the real causes of deficiencies in profit-making, and now under the impetus of the N. R. A. movement most manufacturers are turning their attention from endless arguments about accounting details to the major need of sales at a profit.

C. Even if it were not certain that depreciation should be figured an original cost, manufacturers could agree on this procedure and by intelligent cooperation make their industry profitable despite the fact that some disgruntled objector might argue that the costs were not "true costs."

D. The only essential in present-day cost accounting is that proper analyses of used and unused plant facilities be made, so that an intelligent decision can be made as to the need of rectifying past mistakes by writing off in whole or in part the cost of unused plant, or at least making the carrying charges on unused plant a charge against surplus instead of current operations.

X. Bankers are no more desirous of casting depreciation into the realm of uncertainties based on future fluctuations of the dollar

than they are of providing for future settlement of debts on the same basis. If a stabilized dollar comes, well and good; accounting, in any event, should recognize only past and present facts.

3. *Should Interest on Investment Be Included as an Element of Cost?*

AFFIRMATIVE

I. The margin between selling price and cost is profit. It is *possible* to include interest on investment in either part of selling price—cost or profit; but correct theory and useful practice warrant the inclusion of interest in cost.

II. The work of the accountant lies close to the field of economics, and the far-sighted accountant recognizes the desirability of adhering to sound economic principles.

A. Modern economists clearly differentiate between the concepts of interest and profit, on the ground that interest is the return to him who exercises the capitalistic function or provides the capital, and profit the return to him who exercises the functior. of the entrepreneur or takes the risk.

B. It is unsatisfactory to the modern economist to combine interest and profit as the "gross profit" above cost, for such a combination of a fixed and a variable rate distorts the comparison of the variable rates for different aggregations of capital.

1. Combined rates of 10% and 15% for interest and profit show an earning power ratio of 1 to 1.5.
2. With interest on investment at a fixed rate of say 5% eliminated in each case, the true profit rates are approximately 5% and 10% or a ratio of 1 to 2.

C. Entrepreneur's cost to the economist always includes any interest upon the capital invested, and it is proper to bring accounting cost into reasonable accord with this by including interest on investment in accounting cost, through manufacturing burden and through selling and administrative expense.

1. It is a false standard to say that accounting costs must include only payments made to parties outside the

business. No one can deny that the salary of the entrepreneur as manager is a valid cost.

2. It is a false standard to say that accounting costs must represent items legally required to be paid. Depreciation charges are permitted, not required, by law; but they are none the less legitimate costs.
3. It is a false standard to say that interest on borrowed capital may be treated as an element of cost, but not interest on owned capital. Capital gives rise to a cost factor solely because of its use in production—who furnishes the capital is immaterial.
4. It is a false standard to say that because interest on owned capital may be disbursed in the form of dividends, such interest is not cost but profit. Dividends are simply the financial device used to distribute to the pure entrepreneur true profit and to the entrepreneur-capitalist interest for the use of capital and profit for risk.
5. It is a false standard to say that depreciation charged to cost obviates the necessity of an interest charge thereto. Depreciation is a cost for the exhaustion or consumption of an asset, not a cost for the *use* of the investment. Were depreciation impossible, interest on investment would still be a cost.

III. From the practical point of view, a failure to include interest in cost makes impossible any satisfactory solutions for important problems of management.

A. The most important of these problems are:

1. Recognizing the time element in costs in long processes (e.g., curing of tobacco, seasoning of lumber, aging of liquor, etc.)
2. Judging carrying costs in extractive industries.
3. Comparing inventory policies.
4. Measuring relative economy of methods or machines (Note—Formulas of the American Society of Mechanical Engineers for computing economies of labor-saving equipment include as a factor interest on investment.)
5. Separating departmental profits.

6. Distinguishing between kinds of business or lines of sales.
7. Calculating cost of branch operations.
8. Comparing complete and incomplete plants—i.e., plants which vary as between purchased and manufactured parts in their various operations.
9. Judging owned and rented plants.
10. Deciding on the buying or generating of power.
11. Composing differences as to methods of financing.
12. Making uniform cost plans for associations.
13. Developing true unearned burden and loss from unused plant and equipment.
14. Harmonizing costs of construction (which include interest) and operation.

B. In all these cases, where interest is an important element of cost, there is no more sense in leaving it out of the current accounting and depending on collateral statistical calculations than there would be to follow the same cumbersome procedure with, say, depreciation.

IV. Once interest has been clearly differentiated from true profit, there is no difficulty in deciding upon a proper rate of interest.

A. The dividends on preferred or common stocks, or the interest payments on bonds, are not indicators of a proper rate for the use of capital, exclusive of risk.

B. Nor is the so-called "return" required for a particular industry a valid measure of the proper interest factor, for this "return" includes not only interest but also the profit needed to attract capital to the industry by affording adequate compensation for the risks of the industry.

C. Similarly, the so-called "return" required for a particular company is not a valid measure of the proper interest factor.

D. Economic theory correctly maintains that there is a basic rate of return which eliminates all elements of risk, and that only this return is pure interest.

E. In actual practice the determination of the interest rate to be used devolves itself into choosing a rate in which the element of risks is reduced to a reasonable minimum, just as depreciation is based on a reasonable life period.

F. The rate which comes sufficiently close to the theoretical con-

ception of pure interest is the one which ought to be realized from any reasonably conservative investment of business capital—that is, from an investment in high-grade long-term securities where the risk is reduced to a reasonable minimum.

G. Interest rates may vary as between localities, each having a definite idea of what rate, say between 5% and 7%, constitutes a fair rate to be expected on reasonably secure long-term investments.

V. It is not difficult to define the basis to which the interest rate is to be applied; and two distinct methods have been developed, the "net-investment" method derived from the liability side of the balance sheet, and the "flat-rate" method from the asset side.

A. The net-investment method has shortcomings which make its use less desirable.
   1. This method contemplates a charge for interest on the net investment or net worth of the business, in addition to any interest actually paid on borrowed capital.
   2. It is wrong to differentiate between borrowed capital and owned capital as far as the interest component of cost is concerned, for the dollar borrowed in a given business does no more or no less work than the dollar owned.
   3. The cost of the product should be influenced not by the nature of the financing, but solely by the amount of capital used in production.
   4. The net-investment plan breaks down completely when in a departmentalized business the interest charge has to be subdivided (and on a basis which has no definite relationship to the source of capital).

B. The flat-rate method applies a uniform interest rate to the original costs of assets representing the capital invested, thus making no distinction between assets as to their origin from borrowed or owned capital, and permitting subdivision of the interest charge in as great detail as required by the plan of burden distribution.
   1. Most types of assets on the balance sheet are appropriate for inclusion in the interest basis, exceptions being:
      a. Assets not used or useful in connection with the

productive processes for which costs are being determined.

b. Assets on which interest is being earned independently—e.g., investments.

2. In actual practice, the business man is inclined to favor using an "abridged asset" basis consisting of Land, Buildings, Equipment and Inventories, with recognition of Accounts Receivable and Cash only in the exceptional cases where circumstances make the interest cost for such items really significant.

3. Under straight-line depreciation accounting, assets offsetting the accumulated depreciation reserve do not need to earn interest, and strict theory would require the elimination of such assets from a full-asset basis. Where the abridged-asset basis is used, however, such offsetting assets can reasonably be ignored, and the interest rate be applied to the original costs of all assets used in the abridged-asset basis, to produce a reasonable interest charge to cost.

VI. Charging interest to cost can easily be handled from the bookkeeping point of view.

A. Interest can be included in cost just as easily as depreciation taxes or insurance, with beneficial results greatly disproportionate to the slight effort involved.

1. No more work is involved in the financial books than is required for the handling of any accrual account.

2. On the cost accounting side, one additional element in the burden rate does not require an appreciable addition to the work of a single clerk.

B. The interest included in cost may be offset by a credit to an account called Interest Charged to Cost.

1. The credit to profit and loss from this account is merely a bookkeeping entry which is either completely offset currently in the Profit & Loss Account by the accumulated debits transferred from Cost of Goods Sold; or partly in this way currently, and partly in the Surplus account at a later time, whenever the goods are sold.

2. The unoffset amount of interest debits or credits in

any one year is as a rule too small to disturb the showing of current profit; and since such an item will eventually be washed out in Surplus, it can be disregarded.

3. Since interest is a cost, just as depreciation is a cost, it should be included in the inventory value.

C. If one dislikes the idea of having the profit and loss balance for a period subject to even slight modifications because of unoffset debits or credits for interest, and of letting such differences wash out in Surplus, or if one insists on eliminating interest from the inventory for tax reasons, he may carry the interest credit not to Interest Charged to Cost (a profit and loss account) but to Interest Reserve (a balance sheet account).

1. It is possible to determine with reasonable accuracy the percentage which interest bears to the total cost of goods manufactured.
2. This percentage, applied to the closing inventory, shows the approximate amount of interest in this inventory, and correspondingly the amount to which the Interest Reserve should be adjusted through profit and loss. The reserve is then deducted from the inventory to show a net figure for the balance sheet.

D. If one dislikes the Interest Reserve method, on the ground that not even the gross inventory value should contain interest, the debits representing interest expense on closing inventory items may be carried on the balance sheet as a deferred charge to operations, with the offsetting credit for unrealized interest shown as deferred income.

E. The Interest-Charged-to-Cost method is easier to operate in cases where the interest figure for the inventory is not demanded, and it is just as easy (the same method of calculations being used) where such information is required.

VII. Proponents of interest inclusion, in all classes, have in increasing numbers endorsed the idea as representing an advance in accounting theory and practice:

A. Accountants.
B. Business Men.
C. Trade Associations.

D. Labor.
E. Governmental Departments.

VIII. The advocates of interest as a cost are actuated by motives of fundamental importance:

A. They wish to secure accurate cost comparisons, and they know that without interest, cost comparisons are often misleading.
B. They feel that the general adoption of interest as a cost will mean a most desirable step forward toward accounting uniformity.
C. They believe that the first and foremost requirement for profitable selling prices is a knowledge of what the real costs are.
D. They are convinced that accounting for interest on investment as a cost is important from a social and political point of view, for most of the class attacks on corporations on the ground of excessive earnings would be nullified if proper consideration and publicity were given to the interest return and the real profit return on the investment actually in use.

IX. The weight of the latest decisions of the highest courts is unmistakably on the side of the principle that interest on investment is a cost for the use of capital, entirely apart from profit.

A. The substance of the record is that since the Western Glass Co. decision in the Seventh Circuit, in July, 1915, bringing to a point preceding opinions of the United States Supreme Court, there have been decisions in the Fourth, Sixth and Eighth Circuits not inconsistent with the new rule of the Seventh Circuit, in favor of interest, and still others in the Second and Seventh Circuits strengthening this rule through reiteration and further analysis. In general, the various courts hailed the new rule as being in "accord with business practice and common sense."
B. From a review of certiorari proceedings before the United States Supreme Court, it is evident that at least in the first and most important case (Western Glass Co.) the court had full opportunity to correct any misunderstanding of its own

mature attitude on the subject of interest inclusion in cost. There are no indications at all that the various Courts of Appeal did not follow the correct principle in treating interest as an authorized cost, where it was possible to determine the proper amount.

C. This settled practice refers directly only to patent cases, but any principle which is necessary for the determination of true profit in a patent case is equally applicable to any business situation where profit is to be determined.

3. *Should Interest on Investment Be Included as an Element of Cost?*

NEGATIVE

I. Correct economic theory may include interest on investment as a part of cost rather than profit, but neither correct accounting theory nor any practical necessity warrants such treatment in the accounts.

II. It is impossible to bring accounting cost into exact agreement with entrepreneur's cost, and it is not worth while to attempt to reconcile the two.

A. Entrepreneur's cost takes into consideration the economist's categories of wages, rent and interest.

B. Accounting cost is classified according to raw materials, labor, burden, selling expense and administrative expense.

1. Charges in these groups represent either actual outlays (e.g., purchases, wages, etc.) or prospective outlays (e.g., for replacement of depreciated property).
2. It is foolish to complicate the accounting by adding an artificial charge for interest. Regardless of the economic significance of interest, it is better, from the accounting point of view, simply to consider that interest is embodied in the profit residue above cost, and that dividends paid to stockholders are made up of interest plus profit.

III. Although it must be admitted that in certain cases the inclusion of interest in the cost basis is essential to valid comparisons, it is seldom if ever necessary to carry interest as a cost through the accounting record.

A. The importance of the interest factor is exaggerated, for interest is not a deciding, or even an important, factor in many cost comparisons.

B. If in a particular case interest needs to be considered as a cost, sufficient consideration can be given to it in a statistical calculation without placing it on the accounting records.

IV. It is difficult to determine what rate of interest should be used, and an arbitrary choice must be made.

A. No one ventures to say what is the general pure interest rate of the economist involving no risk.

B. Approximations of this pure interest rate in particular cases vary according to locality and financial conditions, and make agreement as to a usable rate difficult if not impossible.

V. The advocates of interest inclusion are not agreed among themselves as to what should constitute the basis to which the interest rate should be applied; and the same arbitrary method that must be used to select the rate must also be applied to the determination of the interest basis.

A. The result is merely a guess at what is the true economic return of interest on the capital invested.

B. Where approximation enters the process from beginning to end, it is far more sensible to confine the accounting to facts.

VI. Although the bookkeeping technique of getting interest on investment into cost is simple, the accounting results have certain undesirable aspects.

A. The offsetting credit to the interest charge represents unrealized gain; and to the extent that the interest cost for goods sold is different from the interest cost for goods produced, the current profit and loss is distorted.

B. Even if this distortion is recognized, and an effort is made to eliminate from current profit and loss the unrealized gain on goods still unsold, it is impossible to do so exactly.

1. The procedure of including interest on investment in burden and applying this to the product on various bases is so involved that the interest included in the closing inventory can be determined only by means of a rough approximation.

2. When one considers the doubtful benefits of interest

inclusion, and the certain difficulties of removal (and interest has to be taken out of inventories for tax purposes), he can hardly refrain from feeling that he ought to leave it alone in the first place.

VII. The opponents of interest inclusion are found in all classes; and although efforts have been made through surveys and questionnaires to show a rising tide of enthusiasm for interest as a cost, the fact remains that the great majority of accountants and business men are opposed to the idea or refuse even to consider it as debatable.

VIII. The opponents of interest inclusion feel that their stand has a sound basis.

A. They approve of accurate cost comparisons, but hold that the inclusion of interest in the accounts is not necessary to this end.

B. They are desirous of greater progress toward accounting uniformity, but feel that any attempt to secure general agreement on such a controversial point as interest would only interfere with cooperative action along more desirable lines.

C. They agree that sound pricing must be based on a knowledge of costs, but they hold that the provision of an adequate profit margin will take care of interest without complicating the cost procedure.

D. They believe that if interest is included as a part of cost, the general disposition of the public and of labor will be to lay claim to part or all of the balance of income on the ground of over-exaction and under-payment respectively. In other words, the idea of a limited "fair return," which is characteristic of the public utility field, would be extended to industry, with resulting harm to private initiative and enterprise.

IX. It is true that some cases in the field of patent litigation seem to endorse the idea of allowing interest as a cost to the defendant in calculating damages for infringements. This does not mean, however, that industrial accounting needs to follow along the same line; nor does it mean that industry must depend upon the courts for knowledge as to what constitutes proper accounting.

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